

OUTLINE FOR RCRA FACILITY ASSESSMENT (RFA)
SCOPE-OF-WORK

1. Project Overview and Objectives

This section essentially consists of information, not directives, given to the Contractor by the project team. For additional general information on the topics in this section, refer to section 1. of the RI/FS outline.

1.1 Site Background
1.1.1 Location
1.1.2 Regulatory History

In general, this section should present an overview of the regulatory history of the site/installation. In subsequent section, project manager should require in this scope that the Contractor develop the regulatory history associated with this site. This is very important background information.

1.1.3 Regulatory Authorities

The project manager must secure a copy of the permit conditions, Federal Facility Agreement, Compliance Order, Enforcement Order, etc., that is requiring the initiation of this work. Only after the project manager has that information can he/she successfully scope the RFA. The requirements of the scope will serve to fulfill the requirements in the permit or order. The project manager should reference the permit or enforcement order in the scope.

Under RCRA it is extremely important to cite which RCRA statutory authority the RFA is to be conducted under (see Enclosure 15 of the ETL on regulatory matters for further details on RCRA statutory authorities).

The project manager should specifically depict the state's regulatory authorities in the scope and indicate what role federal EPA region is expected to have at the site. The project manager should describe in the scope what type of

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RCRA authority the state has, i.e. pre-Hazardous and Solid Waste ACT (HSWA), base RCRA, no authorization, etc.

1.1.4 Site Activities and Overall Waste Handling Practices

It is important to research and determine the types of processes and the types of waste used at the site. This information should be included in the scope in order to give the Contractor a better feel of the type of Solid Waste Management Unit (SWMU) that is to be studied. Furthermore, the project manager should require through the scope that the Contractor identify whether or not the waste is listed, characteristic, or a hazardous constituent. Contractor should also be required to specify waste codes as per 40 CFR 261.

1.1.5 Previous Studies and Results

Since these are or were operating facilities, much operating information should be available. The project manager should require the Contractor to secure past disposal records, waste analysis records, manifests, permits, enforcement records, etc. describing the waste management activities at the site.

1.2 RFA Project Planning Overview and Objectives

Refer to the explanatory text in section 1. of the RI/FS outline. General objectives of RFA are to collect, minimally, sufficient information to support,

- 1) identification and gather information on releases at the facility;
- 2) evaluation of SWMUs and other areas of concern (OACs) for releases,
- 3) recommendations for further action if appropriate, and
- 4) screen SWMUs which require no further action

The first phase of the RCRA corrective action process is the RFA, which is typically conducted by the EPA or RCRA authorized state during the RCRA permit process. On occasion,

the owner/operator of the facility may choose to initiate the RFA on their own accord. See Enclosure 15 to the ETL on regulatory matters for further explanation.

- 1.2.1 Site Strategy Development
- 1.2.2 Project Objectives and Project Decision Statements
- 1.2.3 Data Quality Objectives

1.3 Summary of Required Tasks

This is only a superficial listing of tasks to be performed under this scope-of-work. No details are to be given here.

- Task 1 Preliminary Available Data Review (PR)
- Task 2 Prepare Visual Site Inspection (VSI) Plan
- Task 3 Conduct VSI
- Task 4 Prepare PR/VSI Report
- Task 5 Prepare Sampling Visit (SV) Plans
- Task 6 Conduct SV - Field Investigations
- Task 7 Sample Analysis, Data Assessment and Reporting
- Task 8 Data Evaluation and Recommendations Development
- Task 9 Prepare RFA Report Task 10 Post RFA Support

1.4 References

Include citations of enforcement orders, permits, past inspection reports, past operating records, previous reports, guidance documents such as RCRA Facility Assessment Guidance, etc. Note which of these documents are provided to the Contractor. Previous reports or other historical documents should only be referenced if the team possesses or can locate them.

2. Project Requirements

2.1 Task 1 Preliminary Available Data Review (PR)

This section requires the Contractor to research, compile, and evaluate available information on the site(s). This includes information on the past activities and conditions at

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the site, regulatory history of the installation or facility,
and regional or background information relevant to the area.

- 2.1.1 Literature Searches
- 2.1.2 Aerial Photographs
- 2.1.3 Background Data Collection
- 2.1.4 Interviews

2.2 Task 2 Prepare Visual Site Inspection (VSI) Plan

2.2.1 Identification of VSI Objectives

This section would require the Contractor to develop specific
VSI objectives based on the PR in order to fulfill the
following general goals.

- 2.2.1.1 Identify Evidence for Release(s)
 - 2.2.1.2 Identify Additional SWMUs, Corrective
Action Management Units (CAMUs) and
OACs
 - 2.2.1.3 Fill Data Gaps in PR
 - 2.2.1.4 Develop Recommendations
- ### 2.2.2 VSI Plan Components

This section would describe for the Contractor what is
expected in the VSI plan. The requirements under this topic
can be prepared by any of the team members, but most likely
would be prepared by the project manager.
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- 2.2.2.1 Summary of PR
- 2.2.2.2 Site Boundaries, SWMUs, CAMUs and
OACs Identification

This section should require the Contractor to present in the
VSI plan the locations and approximate boundaries of SWMUs,
CAMUs and OACs, as well as the boundaries of the facility.

It is imperative that the Contractor also be required to
identify the CAMUS. CAMUs are important because wastes from
within the CAMU can be mixed and/or consolidated without
triggering the land disposal restricts of 40 CFR 268. If
waste is moved outside of a CAMU, it cannot be placed in or

on the ground. If waste is placed on the ground outside the boundaries of the CAMU, this is illegal land disposal and a violation of the land disposal restrictions.

2.2.2.3 Other Areas to be Inspected
2.2.2.4 Identified Potential On-Site
Interviews

This section should require the Contractor to identify in the VSI plan the personnel at the installation or facility with whom interviews are desired. This may require coordination with the installation, as discussed in Section 2.3.1 below.

2.2.2.5 Photographs/Log Books

The scope should require here that the Contractor describe in the VSI plan the type of photographic and written records to be kept of the VSI.

2.2.3 Site Safety and Health Plan

The Contractor is required to have a site safety and health plan for the VSI. The topics to be addressed are listed in Section 5 with additional information in Enclosure 8. Since the VSI will be "non-intrusive" in nature, an abbreviated plan may be prepared, i.e., less detail will be required for each topic.

2.3 Task 3 Conduct VSI

2.3.1 Coordination with Facility

This section should describe the procedures and responsibilities for coordination of the VSI with the facility. This should be prepared by the project manager.

2.3.2 Interviews

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This section should describe the number of interviews anticipated and any details about obtaining or conducting interviews.

2.3.3 Records

This section should describe the required records to be made and kept of the VSI and interviews.

2.4 Task 4 Prepare PR/VSI Report

The requirement for a separate PR/VSI report is optional. The PR/VSI can be documented in the RFA report instead, particularly if subsequent activities such as a sampling visit, are conducted. The installation should be consulted in preparing this section.

- 2.4.1 Summary of PR
- 2.4.2 Summary of VSI
- 2.4.3 Recommendations for Sampling Visit (SV)

2.5 Task 5 Prepare SV Plans

The SV may not be necessary if adequate information to support recommendations for a RCRA Facility Investigation or if no further action is recommended for the site(s) based on the PR/VSI. Sampling objectives and design for a SV should be determined in accordance with the guidance provided in the relevant RI/FS outline sections.

2.5.1 Workplan Development

This section should require the Contractor to prepare a sampling visit workplan. Special components and considerations are described below. Refer to the appropriate sections of the RI/FS outline for additional information on these topics.

- 2.5.1.1 Summary of PR/VSI
- 2.5.1.2 Development/Refinement of Data Quality Objectives
- 2.5.1.3 Data Collection Design
- 2.5.2 Preparation of Workplan Attachments
 - 2.5.2.1 Chemical Data Acquisition Plan (CDAP) Attachment
 - 2.5.2.2 Monitoring Well Installation and Drilling Plan (MWIP) Attachment
 - 2.5.2.3 Site Safety and Health Plan (SSHP) Attachment

2.6 Task 6 Conduct SV - Field Investigations

Many of the field investigation activities to be done under the RFA are a small subset of the activities under an RI/FS, and is similar to a PA/SI. In most cases, the field work is very limited. NOTE: NOT ALL of the activities listed below are appropriate for every project. Only those activities appropriate for the sites under study need be required. Refer to Section 2.3, Field Investigations of the RI/FS scope-of-work outline for the information relevant to preparing these portions of the RFA scope.

Note that since the sampling locations are likely to be very dependent on the Contractor's performance of the PR and VSI, it may be best to let the Contractor recommend the locations in the SV plans based on the refinement of project objectives. Contract modifications may be needed to reflect a changed perception of the site. In any event, the project technical staff will need to be involved throughout the process.

- 2.6.1 Geophysical Surveys
- 2.6.2 Surface Soil Sampling
- 2.6.3 Surface water/Lagoon Sampling
- 2.6.4 Leachate Sampling
- 2.6.5 Soil Gas Sampling
- 2.6.6 Air Sampling
- 2.6.7 Wipe Samples
- 2.6.8 Subsurface Soil Sampling

The number and depth of any borings or test pits should be limited to those necessary to fulfill the objectives of the

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SV. These would be done not to define the extent of contamination, but only to show that it exists.

2.6.9 Drum Sampling

2.6.10 Monitoring Well Installation and Sampling

This section would require the installation of monitoring wells and/or sampling of existing wells at the site. The RFA SV should be very limited in scope and monitoring well installation is not generally done under this phase. Confirming contamination from subsurface features such as tanks may require this activity. Any well installation program should be very limited.

2.6.11 Site Topographic and Boundary Surveys

2.6.12 Imminent Threats to Public Health or the Environment

2.7 Task 7 Sample Analyses, Data Assessment and Reporting

The following sections should define the analytical and data assessment/validation protocols for the completion of the RFA. Data quality objectives (DQOs) for analytical procedures and quality control requirements, should be developed based upon the requirements of a permitting process, a Federal Facilities Agreement (FFA), or a consent or an enforcement order. Only then can specific DQOs be formulated to identify and evaluate individual SWMUs and/or CAMUs. The information gathered during the RFA will then be used to provide support data toward future investigations or eliminate sites from further consideration.

The sampling and analytical approach utilized for the RFA requires the same attention to detail as the RI/FS approach, but for a less-encompassing effort toward the number of samples taken. Care must be taken to compile enough information to achieve the final goal of the RFA - to confirm or deny releases at the facility. Reference the explanatory text within the RI/FS SOW outline for additional information.

2.7.1 Data Review and Assessment

Based upon the needs of the site-specific RFA and input from the data users, the chemist should specify the level of confidence (acceptable PARCC parameters) required for each type of data (existing and new). Project specific DQOs for sample analysis and data assessment/validation, and the goal of the RFA must be maintained when reviewing existing data and when specifying Contractor requirements to generate new data. When developing the data requirements for the project, the project chemist and technical staff must balance time and resource constraints with the desired confidence level for the data.

Existing data will be reviewed within the PR portion of the RFA. The technical support team (data users and chemist) should jointly review and assess past data for it's usability. The site is then visually inspected during the VSI. The PR/VSI summary in turn helps define data gaps which may require sampling and analysis during the SV portion of the RFA.

Reference the explanatory text within the RI/FS SOW outline for additional information over the following subjects.

2.7.1.1 Existing Analytical Data

2.7.1.2 New Data

This section should define guidelines for the appropriate analytical level(s) to be used for data acquisition and corresponding PARCC parameters which will indicate acceptable data quality. Data end-use should be indicated with a table summarizing various SWMU's or OACs. Examples and suggested format for these tables are located within the Project Planning Guidance Document. The Contractor is tasked in this section to propose data review and assessment/validation protocols based on these guidelines.

Based upon the results of the PR/VSI summary, the data needs for the SV portion of the RFA can be decided. The Contractor should develop these issues on a site-specific basis.

2.7.2 Analytical Procedures

The following sections of the SOW will outline specific analytical protocols to be followed on a site-specific basis for the entire RFA. The chemist should generate tables summarizing this information. Individual tables defining specific analytical protocols and sample frequency should be generated for each SWMU/CAMU undergoing sampling activities. The chemist must be intimately aware of the project's background details (especially existing data) and knowledge of areas where data gaps exist when collaborating with data users in order to make decisions as to the most appropriate future analytical protocols. Due to the effect that the PR and VSI will have on the requirements of the SV, the technical staff will need to be involved throughout the entire project. Contract modifications may be needed to reflect a changed perception of a site.

Reference the explanatory text within the RI/FS SOW outline for additional information over the following subjects.

2.7.2.1 Field Screening

This section should define field screening methods to be used in the process of the RFA. The chemist and geologist should propose acceptable methods to the Contractor. A Contractor may also be given latitude to propose field screening applications. The Contractor must summarize all field screening in the CDAP for review and approval.

As noted in the EPA DQO guidance, proper field screening techniques can be instrumental in reducing the time it takes to perform an RFA, reduce costs, reduce "intrusive" sampling locations, and, in general, lead to more effective use of Level III and IV analyses. Field screening is primarily used to provide indications of contamination at analytical Levels I and II. Results of field screening may be used to direct soil sampling into areas of contamination or "hot spots", or to screen samples for analysis.

Methods and field test kits may be used (i.e. soil gas, organic screening (HNU, OVA), metals screening (geophysical, XRF), PCB/PCP (Clor-in-soil, amino-assay), etc.) as a criteria to screen samples for selection and submittal to a fixed laboratory for analysis, or utilized for the additional data from field monitoring.

- 2.7.2.2 Water
 - 2.7.2.2.1 Surface
 - 2.7.2.2.2 Ground Water
- 2.7.2.3 Soils/Sediments/Sludges
- 2.7.2.4 Drum Samples
- 2.7.2.5 Wipe Samples
- 2.7.2.6 Air Samples
- 2.7.2.7 Soil Gas
- 2.7.3 Quality Assurance/Quality Control Samples
 - 2.7.3.1 QA Laboratory
 - 2.7.3.2 QC Samples
- 2.7.4 Laboratory Internal Quality Control
- 2.7.5 Method Detection Limits

Reference the explanatory text within the RI/FS SOW outline
for additional information on this subject.

- 2.7.6 Laboratory Turnaround Time
- 2.7.7 Sample Handling
- 2.7.8 Preservatives and Holding Times
- 2.7.9 Investigation-Derived Wastes (IDW)

Since this site is covered under the auspices of RCRA, all waste generated at the site related to investigations must be handled as a RCRA solid or RCRA hazardous waste. When waste is generated, the generator is responsible to determine if that waste is by definition hazardous. If the waste is hazardous, it cannot be placed back onto the ground unless you are within the confines of the CAMU. If you place waste onto the ground outside the CAMU boundaries, this is illegal disposal and a violation of the Land Disposal Restrictions. (For guidance see Federal Register, 27 July 1990, pages 30842 and 30843.) Hazardous waste may be moved or consolidated within the originating CAMU. The project team leader must require that the Contractor identify all CAMUs. The Contractor should also be required to obtain approval of the CAMU designation from the RCRA regulatory authority.

The chemist should be aware that IDW will be present both at the site and at the laboratory subsequent to sample shipping for analysis. In addition to standard analyses typically run in an RFA, waste streams generated must also be tested for RCRA characteristic waste analyses. The project chemist and the Contractor must develop some analytical protocol that

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will be adequate to determine whether IDW from the subject site may be classified as non-hazardous. The contract laboratory must also be instructed whether to ship completed samples back to the site or to handle them appropriately as IDW. The chemist must be aware that the proposed analytical protocol for the site IDW must be appropriate not only to determine if the waste is hazardous, but also must generate enough information for later manifesting and shipping requirements, if necessary.

Reference the explanatory text within the RI/FS SOW outline for additional information on this subject.

2.8 Task 8 Data Evaluation and Recommendation Development

2.8.1 Data Evaluation

2.8.1.1 Comparison to DQOs - Establish Data Usability

Refer to the RI/FS outline for more information concerning this topic.

2.8.1.2 Refinement of Site Conceptual Model

Refer to the RI/FS outline for additional information concerning this topic. The site conceptual model is to be documented in the RFA report, data evaluation section.

2.8.1.2.1 Nature of Contamination

This section direct the Contractor to evaluate the data in order to refine the understanding the nature of contamination at the site. Refer to the RI/FS outline for additional information, bearing in mind the different objectives of an RFA. Careful cross referencing to the RFA report section (2.9) would be helpful in avoiding a duplication of instruction on preparing these items and double payment for the work.

2.8.1.2.2 Hydrogeology

Refer to the RI/FS outline for more information about this topic.

2.8.1.3 Fate and Transport Analysis

This section should require the simplistic analysis of the potential for transport of contaminants by all affected transport pathways; ground water, surface water, air, as originally defined by the conceptual site model. The scope should make it clear that computer modeling would not be appropriate. Refer to the RI/FS outline for more information on this topic; however, the level of detail under this task is generally much less for an RFA.

2.8.1.3.1 Air Transport

2.8.1.3.2 Surface Water Transport

2.8.1.3.3 Ground Water Transport

2.8.2 Recommendations for Future Actions

As part of this task, the Contractor should be required to develop recommendations based on the available information. This can include recommendations for further study (RFI) or perhaps some possible interim measures. The Contractor should be required to consider innovative technologies if identifying possible interim measures.

Concentrations detected in identified source areas, or projected to occur via fate and transport mechanisms may be compared with proposed action levels to determine requirements for further study and characterization through the RFI, interim/corrective action at the site, or no further action.

Whenever possible, the applicable action levels, **which are identified by the EPA or State**, are incorporated in the permit. If this is not the case, proposed action levels for a number of constituents have been established by EPA for soil, ground water, surface water, and air and are reported within the 55 FR 30798 - 30884, dated July 27, 1990. For compounds not reported within Appendix A, there is also explanatory guidance on the four criteria the EPA utilized in

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their assessment of the listed constituents. Action levels derived according to these criteria represent valid, reasonable estimates of levels in media at or below which corrective action is unlikely to be necessary.

- 2.8.2.1 Further Study (RCRA Facility Investigation)
- 2.8.2.2 Interim Measures

This section would require the Contractor to identify potential interim measures for conditions identified in the RFA. Evaluation of alternatives is discussed in Enclosure 11 to the ETL, Alternative Selection. A compendium of possible alternatives/actions is included in EPA guidance and EM 1110-2-505 Guidelines for Preliminary Selection of Remedial Action for Hazardous Waste Sites.

2.9 Task 9 Prepare RFA Report

The Contractor should be required to include the PR/VSI results as well as the results of the SV. Refer the Contractor to the available guidance.

- 2.9.1 Incorporation of the PR/VSI Report
- 2.9.2 Results of the SV
- 2.9.3 RFA Report
 - 2.9.3.1 Pre-Draft Data Package

Reference Section 2.7.1 of the RI/FS SOW outline for specifics on this submittal.

- 2.9.3.2 Draft RFA Report
 - 2.9.3.3 Final RFA

2.10 Task 10 Post RFA Support

In a few cases, there may be a need for support beyond the RFA. This task should not include the preparation of the RFI, given the much larger scope of an RFI. A separate contract or work order would be appropriate.

3. Project Management

Refer to the RI/FS scope-of-work outline for explanatory text for this section. Advice specifically relevant to performance of project management under the RFA is included here.

- 3.1 Project Manager
- 3.2 Coordination with Other Entities

Since the RCRA corrective action process is typically part of the RCRA permitting process, it is essential that close coordination with the regulators and customer be maintained throughout this process. See Enclosure 15 of the ETL concerning regulatory matters for further discussion.

- 3.3 Conference Notes
- 3.4 Confirmation Notices
- 3.5 Government Support
 - 3.5.1 Government Provided Data and Information
 - 3.5.1.1 Permits and Documentation
 - 3.5.1.2 Access to Individuals at Facility
 - 3.5.2 Existing Plans/Surveys/Air Photos
 - 3.5.3 Utilities
 - 3.5.4 Permits
 - 3.5.5 Rights of Entry
 - 3.5.6 Security/Access
 - 3.5.7 Equipment Storage/Staging Areas
 - 3.5.8 Temporary Office
 - 3.5.9 Investigation-Derived Waste Disposal

IDW can be legally placed within the confines of the CAMU from which it originated. All other wastes that will not be returned to the CAMU must be handled in accordance with 40 CFR 260 through 268.

- 3.6 Travel and Meetings
 - 3.6.1 Facility Data Review and Interviews
 - 3.6.2 Visual Site Inspection
 - 3.6.3 Draft SV Workplan Meeting/Field Work Start-up Meeting

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- 3.6.4 Sampling Visit
- 3.6.5 RFA Draft Report Review Meeting
- 3.6.6 RFA Final Report Review Meeting
- 3.6.7 Public Meetings

Public meetings are not a formal requirement during the RFA process since the RFA is typically an integral part of the RCRA permitting process. The permitting process has strict public meeting and community relations requirements that must be fulfilled.

The project manager should consult the customer and the conditions of the permit to determine if there are any community relations items he/she should put into the scope.

- 3.6.8 Additional Trips
- 3.7 Schedules
- 3.8 Submittals

This section summarizes the submittals expected during the course of the project. No technical requirements are presented here. Number of copies required are specified here.

- 3.8.1 General Submittal Requirements
- 3.8.2 Document Submittal Register
- 3.8.3 Workplans
 - 3.8.3.1 Visual Site Inspection Plan
 - 3.8.3.2 Sampling Visit Workplan
 - 3.8.3.2.1 Chemical Data Acquisition Plan (CDAP) Attachment
 - 3.8.3.2.2 Site Safety and Health Plan (SSHP) Attachment
- 3.8.4 Progress Reports
 - 3.8.4.1 Monthly Progress Reports
 - 3.8.4.2 Daily Quality Control Reports
- 3.8.5 Sampling Log Book
- 3.8.6 Survey Documents
- 3.8.7 PR/VSI Report
 - 3.8.7.1 Draft PR/VSI Report
 - 3.8.7.2 Final PR/VSI Report
- 3.8.8 RFA Report
 - 3.8.8.1 Pre-Draft Data Package
 - 3.8.8.2 Draft RFA

3.8.8.3 Final RFA
3.8.9 Quality Control Summary Report
3.8.10 Boring Logs

4. NEPA Compliance During the RFA

For the RCPA corrective action process there is no "functional equivalent" as in the CERCLA process. There are two basic ways to achieve compliance during the RARA corrective action process. The first way would be for the project manager to develop a programmatic Environmental Assessment/Impact Statement. The programmatic documentation could be developed for the entire corrective action process. The second way would be to integrate the NAPA process into the RARA corrective action process to fulfill the NAPA requirements.

The project manager should consult with the NAPA expert and the office of counsel in order to determine the proper way to meet NAPA requirements. The project manager should then develop the appropriate scoping language.

5. Health and Safety Technical Requirements

This section presents the technical requirements for health and safety. Refer to Enclosure 8 to the ECL for the suggested language for this SOW section.

Two topics, "Site Description and Contamination Characterization" and "Staff Organization, Qualifications, and Responsibilities" may be addressed as a portion of the work plan as outlined in section 2.1. In the event this material is addressed within the work plan (WP), the applicable WP sections should be referenced within these sections of the SHP. Regardless of location, these topics should address the requirements contained in Enclosure 8.

6. Chemistry Technical Requirements

This section presents the technical requirements for performance of sampling and analysis activities. Specific re-

quirements are discussed under the individual topics. Additional guidance on the typical content of this section is provided as Enclosure 13 to the ECL, Chemistry Technical Requirements. An outline of the section is provided here.

6.1 Introduction

6.1.1 CDAP Format and Implementation Requirements

- 6.1.1.1 Section 1. Table of Contents
- 6.1.1.2 Section 2. Project Background Data
- 6.1.1.3 Section 3. Chemical Requirements to Support Project Data Quality Objectives (DQOs)

- 6.1.1.4 Section 4. Contractor Project Organization and Functional Areas of Chemistry Responsibilities

6.1.1.5 Section 5. Field Activities:

- 6.1.1.5.1 Field Instrumentation and Equipment (Calibration and Maintenance)

- 6.1.1.5.2 Field Documentation

- 6.1.1.5.3 Daily Quality Control Report (DQCR)

- 6.1.1.5.4 QC and QA Field Samples

- 6.1.1.5.5 Decontamination Procedures

- 6.1.1.5.6 Matrix: Ground Water Samples

- 6.1.1.5.6.1 Field Screening

- 6.1.1.5.6.2 Locations

- 6.1.1.5.6.3 Sampling Procedure

- 6.1.1.5.6.4 Analytical Procedure

- 6.1.1.5.6.5 Sample Containers, Preservations, Holding Times

- 6.1.1.5.7 Matrix: Surface Water Samples

- 6.1.1.5.7.1 Field Screening

- 6.1.1.5.7.2 Locations

- 6.1.1.5.7.3 Sampling Procedure

- 6.1.1.5.7.4 Analytical Procedure

- 6.1.1.5.7.5 Sample Containers, Preservations, Holding Times

- 6.1.1.5.8 Matrix: Leachate Samples

- 6.1.1.5.8.1 Field Screening

- 6.1.1.5.8.2 Locations

- 6.1.1.5.8.3 Sampling Procedure

- 6.1.1.5.8.4 Analytical Procedure

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- 6.1.1.5.8.5 Sample Containers,
Preservations, Holding
Times
- 6.1.1.5.9 Matrix: Soil Samples
 - 6.1.1.5.9.1 Field Screening
 - 6.1.1.5.9.2 Locations
 - 6.1.1.5.9.3 Sampling Procedure
 - 6.1.1.5.9.4 Analytical Procedure
 - 6.1.1.5.9.5 Sample Containers,
Preservations, Holding
Times
- 6.1.1.5.10 Matrix: Sludge/Sediment
Samples
 - 6.1.1.5.10.1 Field Screening
 - 6.1.1.5.10.2 Locations
 - 6.1.1.5.10.3 Sampling Procedure
 - 6.1.1.5.10.4 Analytical Procedure
 - 6.1.1.5.10.5 Sample Containers,
Preservations,
Holding Times
- 6.1.1.5.11 Matrix: Air Samples
 - 6.1.1.5.11.1 Locations
 - 6.1.1.5.11.2 Sampling Procedure
 - 6.1.1.5.11.3 Analytical Procedure
 - 6.1.1.5.11.4 Sample Containers,
Preservations,
Holding Times
- 6.1.1.5.12 Matrix: Surface Samples
 - 6.1.1.5.12.1 Field Screening
 - 6.1.1.5.12.2 Locations
 - 6.1.1.5.12.3 Sampling Procedure
 - 6.1.1.5.12.4 Analytical Procedure
 - 6.1.1.5.12.5 Sample Containers,
Preservations,
Holding Times
- 6.1.1.5.13 Matrix: Soil Gas Samples
 - 6.1.1.5.13.1 Field Screening
 - 6.1.1.5.13.2 Locations
 - 6.1.1.5.13.3 Sampling Procedure
 - 6.1.1.5.13.4 Analytical Procedure
 - 6.1.1.5.13.5 Sample Containers,
Preservations,
Holding Times
- 6.1.1.5.14 Matrix: Drum / Tank Samples
 - 6.1.1.5.14.1 Field Screening
 - 6.1.1.5.14.2 Locations
 - 6.1.1.5.14.3 Sampling Procedure
 - 6.1.1.5.14.4 Analytical Procedure

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- 6.1.1.5.14.5 Sample Containers,
Preservations,
Holding Times
- 6.1.1.6 Section 6. Sample Chain of Custody,
Packing and Shipping
- 6.1.1.7 Section 7. Laboratory Activities:
 - 6.1.1.7.1 Cooler Receipt Form
 - 6.1.1.7.2 Instrument Calibration and
Frequency
 - 6.1.1.7.3 Quality Control Procedures
 - 6.1.1.7.4 Preventive Maintenance
 - 6.1.1.7.5 Corrective Action
 - 6.1.1.7.6 Data Reduction, Assessment
Validation, and Documentation
- 6.1.1.8 Section 8. Chemical Data Quality
Management Deliverables
 - 6.1.1.8.1 Daily Quality Control Reports
 - 6.1.1.8.2 Laboratory Daily Quality
Control Reports
 - 6.1.1.8.3 Non-Routine Occurrences
Reports
 - 6.1.1.8.4 Pre-Draft Data Package
 - 6.1.1.8.4.1 Pre-Draft Data Package
Organization
 - 6.1.1.8.4.2 Minimum Data Reporting
Requirements for Pre-
Draft Data Package
 - 6.1.1.8.5 Quality Control Summary
Report
 - 6.1.1.8.6 Chemical Quality Assurance
Report
- 6.1.2 Contractor Laboratory Approval
 - 6.1.2.1 Commercial Laboratory Evaluation
 - 6.1.2.2 Laboratory Quality Management Manual
 - 6.1.2.3 Preliminary Questionnaire
 - 6.1.2.4 Performance Evaluation Samples
 - 6.1.2.5 Laboratory Inspection
 - 6.1.2.6 Approval
 - 6.1.2.7 Expiration of Validation
- 6.2 Miscellaneous Requirements
 - 6.2.1 Investigation Derived Wastes

7. Geotechnical Requirements

All of the field investigation activities for an RFA are also
often included in a remedial investigation; therefore, refer

to text in Section 6, Geotechnical Requirements of the RI/FS scope-of-work outline for typical requirements and other information for this section of the R.A. scope. Note that only those sections of Section 6 of the RI/FS scope outline that cover field work specified under Conduct Sampling Visit Field Investigation (Section 2.6) of the R.A. scope should be included in this portion of the R.A. scope-of-work.

- 7.1 General Specifications
 - 7.1.1 Qualified Geologist/Geotechnical Engineer
 - 7.1.2 Applicable Driller Permits and Licenses
 - 7.1.3 Compliance with State Requirements
 - 7.1.4 Utility Clearances
 - 7.1.5 Disposal of Investigation-Derived Waste (IDW)
 - 7.1.6 Explosive Ordnance Disposal
 - 7.1.7 Decontamination of Equipment/Tools
 - 7.1.8 Water Source and Testing
 - 7.1.9 Site Restoration and Protection
 - 7.1.10 Contractor Responsibility for Wells
 - 7.1.11 Site Surveying
- 7.2 Monitoring Well Installation and Drilling Plan (MWIP) Attachment
- 7.3 Subsurface Soil/Rock Sampling
 - 7.3.1 Drilling Method
 - 7.3.2 Test Pit Excavation
 - 7.3.3 Logging Requirements
 - 7.3.4 Geotechnical Sampling and Analyses
 - 7.3.5 Coring/Core Handling
 - 7.3.6 Backfilling
 - 7.3.7 Sampling Techniques
 - 7.3.8 Field Screening
 - 7.3.9 Location/Elevation Survey of Boreholes/Test Pits
- 7.4 Monitoring Well Installation
 - 7.4.1 Drilling Method
 - 7.4.2 Soil/Rock Sampling While Drilling
 - 7.4.3 Field Screening
 - 7.4.4 Casing and Screen
 - 7.4.5 Gravel/Sand Pack
 - 7.4.6 Grouting
 - 7.4.7 Surface Completion
 - 7.4.8 Well Development
 - 7.4.9 Monitoring Well Construction Diagrams
 - 7.4.10 Survey
 - 7.4.11 In-Situ Permeability (Single Well)

Testing

- 7.4.12 Water Level Measurements
- 7.4.13 Dedicated Pumps and/or Bailers
- 7.4.14 Well Sampling
- 7.5 Existing Domestic/Industrial/Municipal Well Inventory
- 7.6 Geophysical Surveys
 - 7.6.1 Surface Geophysics
 - 7.6.1.1 Methods to be Considered
 - 7.6.1.2 Plan Preparation
 - 7.6.1.3 Instrument Calibration
 - 7.6.1.4 Survey Grid/Traverse Spacing
 - 7.6.1.5 Measurement Protocol
 - 7.6.1.6 Grid/Traverse Surveying
 - 7.6.1.7 Data Recording
 - 7.6.1.8 Data Processing and Analysis
 - 7.6.1.9 Report and Drawings
 - 7.6.2 Downhole Geophysics
 - 7.6.2.1 Operator Licensing
 - 7.6.2.2 Methods to be Used
 - 7.6.2.3 Plan Preparation
 - 7.6.2.4 Instrument Calibration
 - 7.6.2.5 Data Recording and Log Scale
 - 7.6.2.6 Data Analyses
 - 7.6.2.7 Report and Log Presentation
- 7.7 Miscellaneous Methodologies
 - 7.7.1 Soil Gas Survey Methodology
 - 7.7.1.1 Probe Design and Placement
 - 7.7.1.2 Probe Purging
 - 7.7.1.3 Sample Recovery
 - 7.7.1.4 Decontamination of Equipment
 - 7.7.1.5 Blank, Background, and Duplicate Samples
- 7.8 Geographic Information Systems (GIS)

8. Air

This section presents the technical requirements for performance of activities associated with air impact assessments. Enclosure 16 presents a general description of air impact assessments for those not familiar with the process.

Explanatory text is included in the RI/FS outline. The scope of activities performed in the R.A. is generally less than that of the RI/FS. Some of the topics below may not be appropriate for the R.A. but are included for completeness. The level of detail to be included in the scope depends on the project and the Contractor's experience in performing air

monitoring and modeling as well as the Contractor's
experience in working with the Corps.

- 8.1 Ambient Air Monitoring/sampling
- 8.2 Meteorological Monitoring
 - 8.2.1 Review Available Data
 - 8.2.2 On-site Monitoring
 - 8.2.2.1 Meteorological Tower
 - 8.2.2.2 Data to be Collected
 - 8.2.2.3 Data Processing, Documentation and Reporting
- 8.3 Emission Rate Measurements
- 8.4 Emission Rate Estimates
 - 8.4.1 Uncontrolled Emission Sources
 - 8.4.2 Remedial Action Sources
 - 8.4.3 Emission Models
 - 8.4.4 Emission Factors
- 8.5 Atmospheric Dispersion Modeling
 - 8.5.1 Purpose and Rationale
 - 8.5.2 Review of Previous Models
 - 8.5.3 Input Data
 - 8.5.3.1 Source Data
 - 8.5.3.2 Receptor Data
 - 8.5.3.3 Meteorological Data
 - 8.5.4 Modeling Methodology
 - 8.5.5 Reporting Results

9. Miscellaneous Requirements